

AMENDMENTS TO THE CLAIMS

1. (Cancelled)
2. (Previously presented) The method for manufacturing a semiconductor device according to claim 15, wherein the first polymer contains at least one of polyimides, acrylic polymers, polymers having an alicyclic structure and fluorocarbon resins formed by homo-polymerizing or co-polymerizing fluorine-containing monomers.
3. (Previously presented) The method for manufacturing a semiconductor device according to claim 2, wherein the fluorine-containing monomers comprise at least one of fluoroolefines, fluorovinylether, vinylidene fluoride, vinyl fluoride, chlorofluoroolefines, and fluorovinylether having carboxylic groups or sulfonic groups.
4. (Previously presented) The method for manufacturing a semiconductor device according to claim 15, wherein said first polymer contains 10% by weight or more fluorine atoms.
5. (Cancelled)
6. (Cancelled)
7. (Previously presented) The method for manufacturing a semiconductor device according to claim 15, wherein said first polymer has a cross-linked structure.
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)

11. (Previously presented) The method for manufacturing a semiconductor device according to claim 15, wherein said solvent comprises at least one of alcohols, aromatic hydrocarbons, ketones, esters, chlorofluorocarbons, and water.

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Currently amended) A method for manufacturing a semiconductor device, comprising:

a) conducting a HDMS (hexamethyldisilazane) treatment on a surface of a semiconductor substrate and forming an anti-reflective coating having a reflectance R within a range of 10% or less, a real part value n of a complex index of refraction within a range of 1.0 to 3.0, and an imaginary part value k of the complex index within a range of 0.4 to 1.3, by coating a composition over [[a]] the treated semiconductor substrate, the composition including:

i) a first polymer containing fluorine; and

ii) a solvent for dissolving said first polymer;

b) forming a resist film of a polymer containing fluorine on the anti-reflective coating; and

c) radiating exposure light onto the resist film.

16. (Previously presented) The method for manufacturing a semiconductor device according to claim 15, further comprising:

d) heating the semiconductor substrate between steps a) and b).

17. (Previously presented) The method for manufacturing a semiconductor device according to claim 16, wherein step d) is performed at a temperature between 100°C and 250°C for 30 seconds to 60 minutes.

18. (Previously presented) The method for manufacturing a semiconductor device according to claim 16, wherein step d) is performed in an oxygen atmosphere.
19. (Previously presented) The method for manufacturing a semiconductor device according to claim 16, wherein a thickness of the anti-reflective coating is 150 nm or less.
20. (Previously presented) The method for manufacturing a semiconductor device according to claim 15, wherein a wavelength of the exposure light is 254 nm or less.